

R E M A R K S

Upon entry of this Response, claims 1, 14-16, and 30 will be amended and claims 26-27 will be canceled. Thus claims 1-25 and 28-30 will be pending. The amendments have been made solely to expedite prosecution of the present application, and no new matter has been added. Applicants reserve the right to pursue the subject matter of the original claims in this application and other applications. Reconsideration and further examination are respectfully requested in view of the following remarks.

Objection to Drawings under 37 CFR 1.83(a)

The drawings stand objected to under 37 CFR 1.83(a). Applicants have added FIGS. 7 through 9 in view of the Examiner's helpful comments. Support for the new FIGS. can be found in the originally filed claims. All of the particular elements listed by the Examiner are included in the new FIGS. with the following exception: "computer readable medium" (*e.g.*, a computer disk storing a program). Applicants respectfully suggest that such a FIG. would not provide any structural detail that is essential for a proper understanding of the disclosed invention as indicated by MPEP § 608.02(d).

Specification

The disclosure stands objected to in connection with the use of the term "tap." The specification has been modified in view of the Examiner's helpful comments.

Claim Rejections under 35 USC § 112, 2nd Paragraph

Claims 1 through 16, 21 and 30 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The claims have been amended in view of the Examiner's helpful comments.

Claim Rejections under 35 USC § 102(b)

Claims 1 through 13 stand rejected as being anticipated by U.S. Patent No. 5,559,881 (“Sih”). Reconsideration is respectfully requested in view of the following remarks.

Claim 1 recites that a “scaling a binary range associated with one or more taps to a value of a high amplitude portion of [a received] input signal.” Moreover, a value corresponding to a second portion of input signal is “stored ... according to the scale.” Consider, for example, a series of input signal samples that range from -2.5v to +2.5v. In this case, input samples may be scaled such that a maximum value that can be stored in association with a tap (e.g., all “1s”) would represent +2.5 v. If the input signal changes such that the samples now range from -1.0v to +1.0v, the input samples may be scaled such that the maximum value that can be stored will instead correspond to +1.0v (e.g., to let samples to be stored with improved resolution).

The system disclosed in Sih uses a threshold value to determine if samples will be attenuated by a pre-determined amount. If, for example, samples can range from -8031 to 8031 then the system might automatically attenuate an input signal by 1.5 dB whenever samples rise above 7900 (e.g., to improve echo cancellation when someone is shouting). Col. 17, lines 21-33.

Thus, Sih does not disclose “scaling ... to a value of a high amplitude portion” of a received input signal as recited in claim 1. Instead, a high amplitude portion of a received input signal is used to determine whether or not the signal will be attenuated by a pre-determined amount. The other references also fail to disclose such an element.

Nor are such elements obvious in view of any of the references. By scaling to a value of a high amplitude portion as recited in claim 1, a resolution associated with a stored sample may be improved. In contrast, attenuating a received input signal as disclosed in Sih will not improve a resolution associated with a stored sample.

Applicants therefore respectfully request allowance of claim 1 (along with claims 2 through 13 dependent thereon).

Claim Rejections under 35 USC § 103(a)

Claims 14-28 and 28-30 are rejected as being unpatentable over U.S. Patent No. 6,768,796 (“Lu”) in view of U.S. Patent No. 5,029,121 (“Kawata”).

Claim 14 recites “determining a range within which a normal echo amplitude portion of an audio signal falls.” Moreover, a “range of values that may be held ... in association with the tap” may be scaled “to the range within which normal echo amplitude falls.”

As illustrated in FIG. 3(a) through 3(c) of Kawata, a system is disclosed in which the first effective bit of coefficient data is used to determine which bits will be stored in a coefficient register. It does not disclose, however, determining a range within which a normal echo amplitude portion of an audio signal (as opposed to tap coefficients) falls as recited in claim 14. Lu also does not disclose any such determination or scaling. Likewise, claim 28 recites determining “a range within which a normal echo amplitude portion of an audio signal” is determined, and claims 17 and 23 recite “scaling” measured amplitudes.

Nor are such features obvious in view of the references. According to the Office Action, it would have been obvious to use the teaching of Kawata in the system disclosed by Lu “for the purpose of realizing the aforesaid advantages [(improving precision and preventing error)].” Applicants respectfully assert that such a broad statement fall far short of a *prima facie* case of obviousness.

The teaching or suggestion to make the claimed combination must be found in the prior art, and not based on the Applicants’ disclosure. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). “To support the conclusion that the claimed invention is directed to obvious subject matter, either the references must expressly or impliedly suggest the claimed invention or the examiner must present a convincing line of reasoning as to why the artisan would have found the claimed invention to have been obvious in light of the teachings of the references.” Ex parte Clapp, 227 USPQ 972, 973 (Bd. Pat. App. & Inter. 1985). The fact that references can potentially be modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. MPEP 2143.01; In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990); Monarch Knitting Machinery Corp. v. Sulzer Morat GmbH, 45

USPQ 2d 1977, 1981-82 (Fed. Cir. 1998) (the question to be asked is “whether the prior art contains a suggestion or motivation to combine references”).

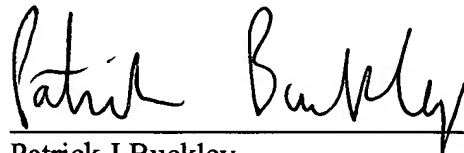
The absence of any motivation in the prior art (and the lack of a convincing line of reasoning) indicates that the Examiner has simply recognized a benefit provided by the present invention, and then used that benefit as a motivation to combine the references – the essence of impermissible hindsight reconstruction.

Because there is no teaching or suggestion to modify the references in this way, a *prima facie* case of obviousness has not been established. Applicants respectfully request allowance of claims 14-28 and 28-30.

CONCLUSION

Accordingly, Applicants respectfully request allowance of the pending claims. If any issues remain, or if the Examiner has any further suggestions for expediting allowance of the present application, the Examiner is kindly invited to contact the undersigned via telephone at (203) 972-0191.

Respectfully submitted,



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Date

AMENDMENTS TO THE DRAWINGS

The attached sheets of drawings include:

FIGS. 1 through 6 annotated to show changes being made,
Replacement sheets for FIGS. 1 through 6, and
New sheets for FIGS. 7 through 9.



Adaptive Scaling Method

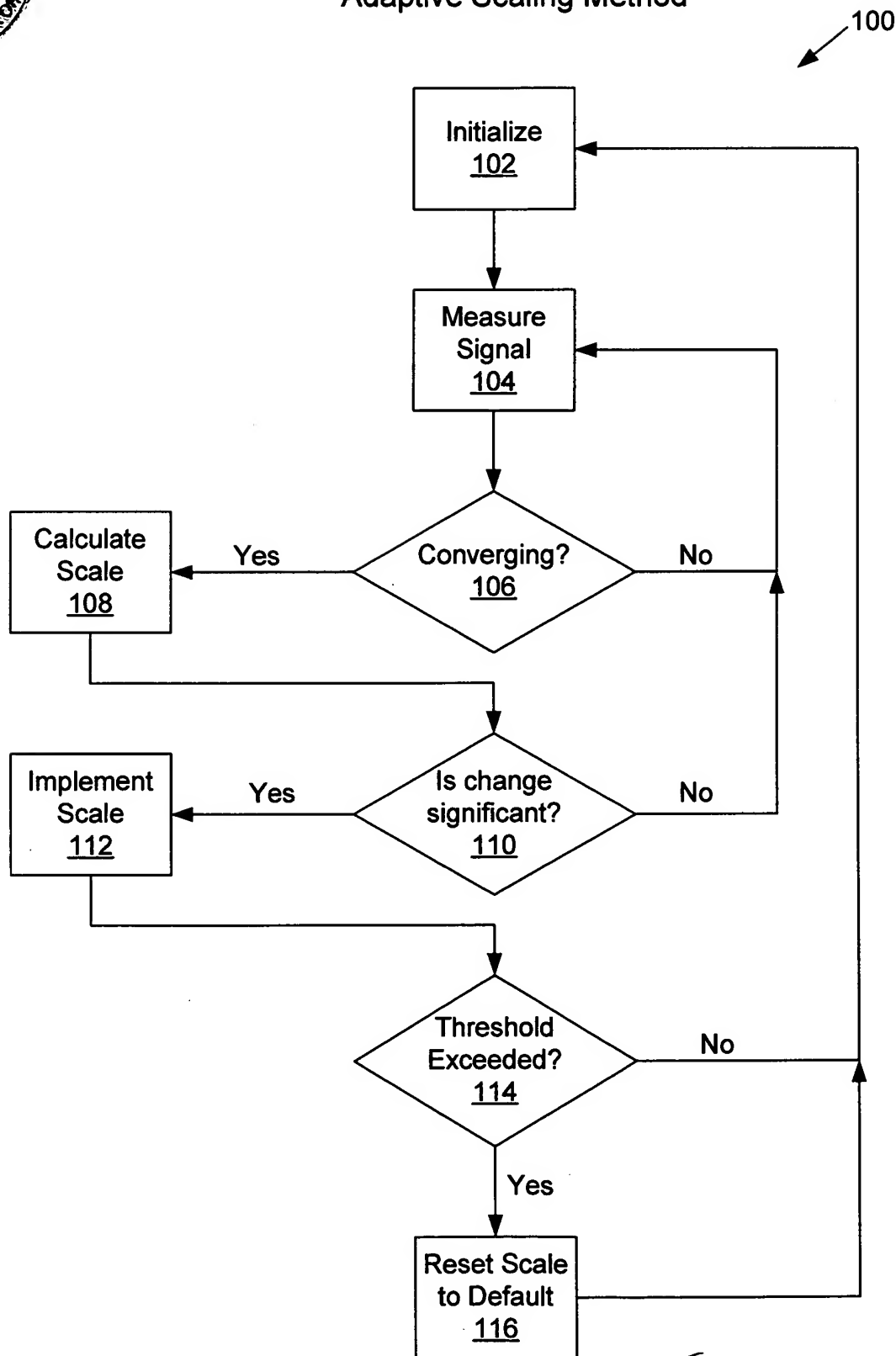


Figure 1/6

Echo Reduction Device

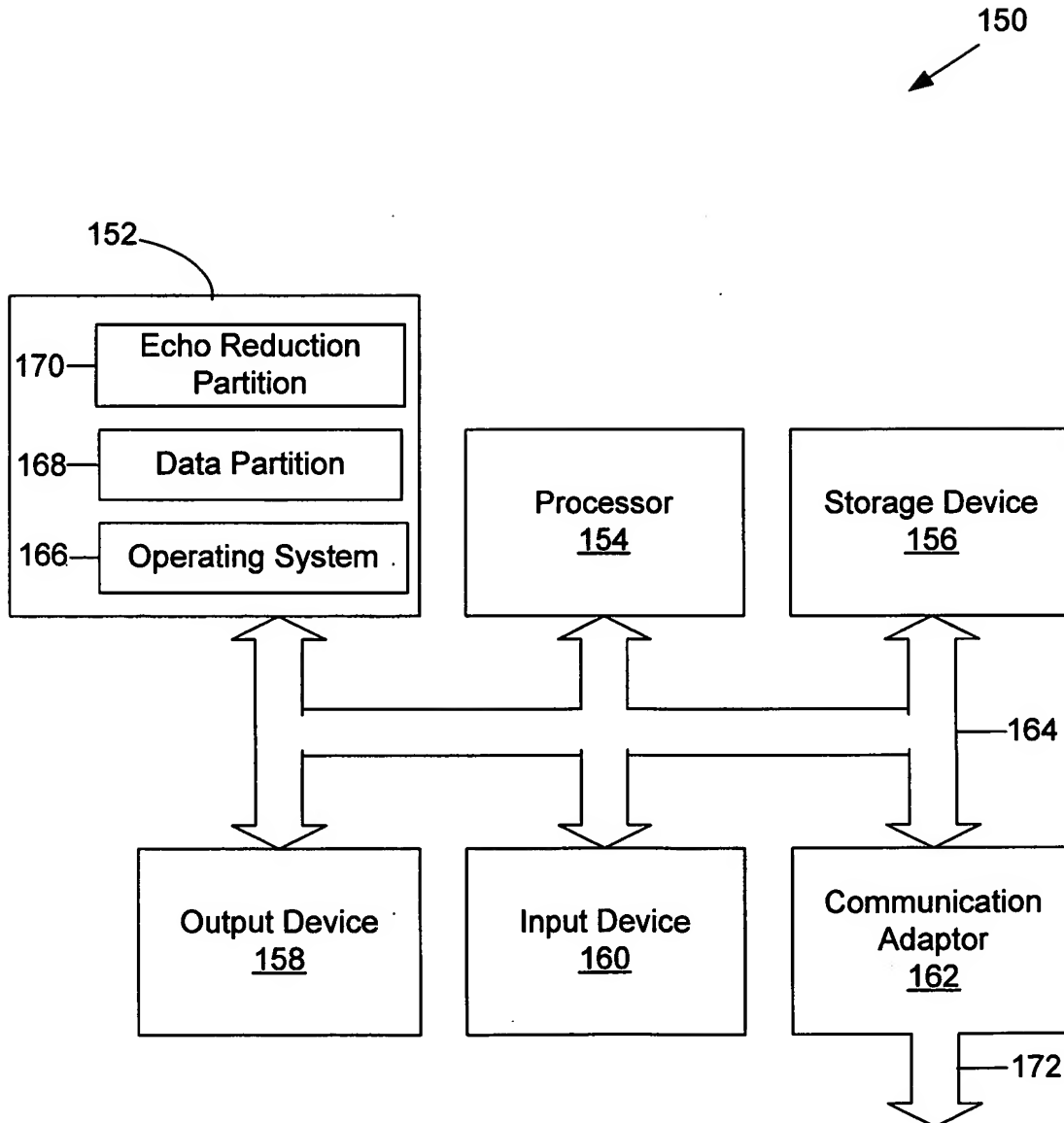


Figure 2/ 6

Voice Over IP Network

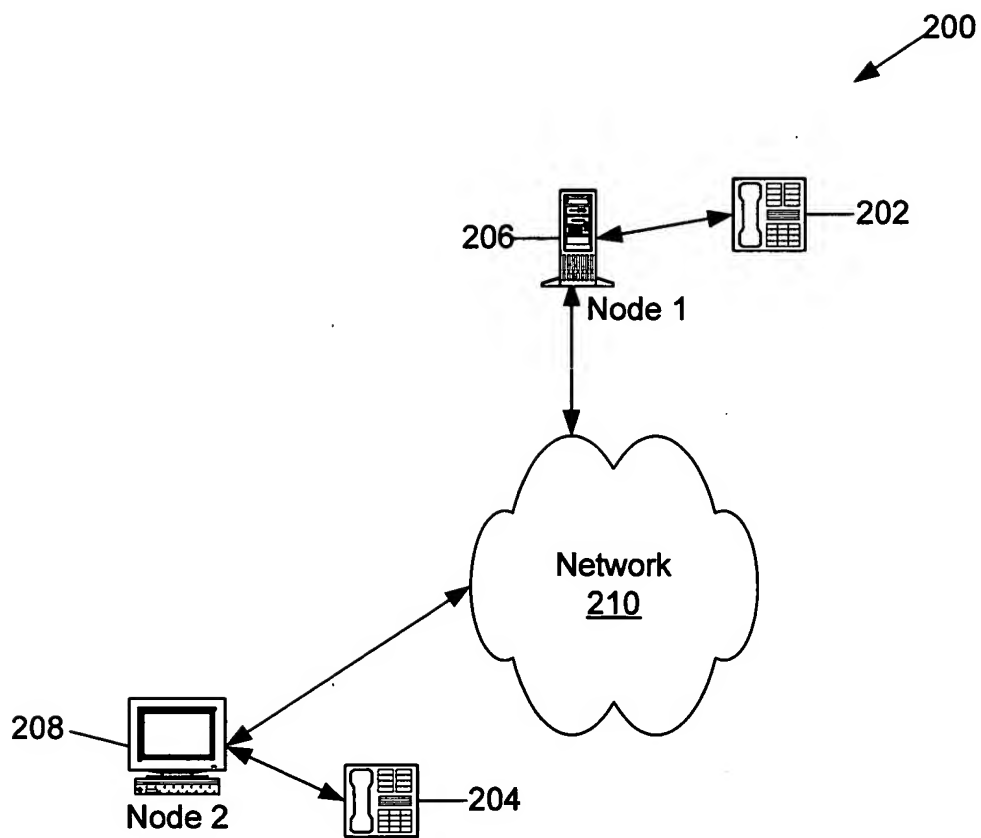


Figure 3 / 6

Echo Reduction System

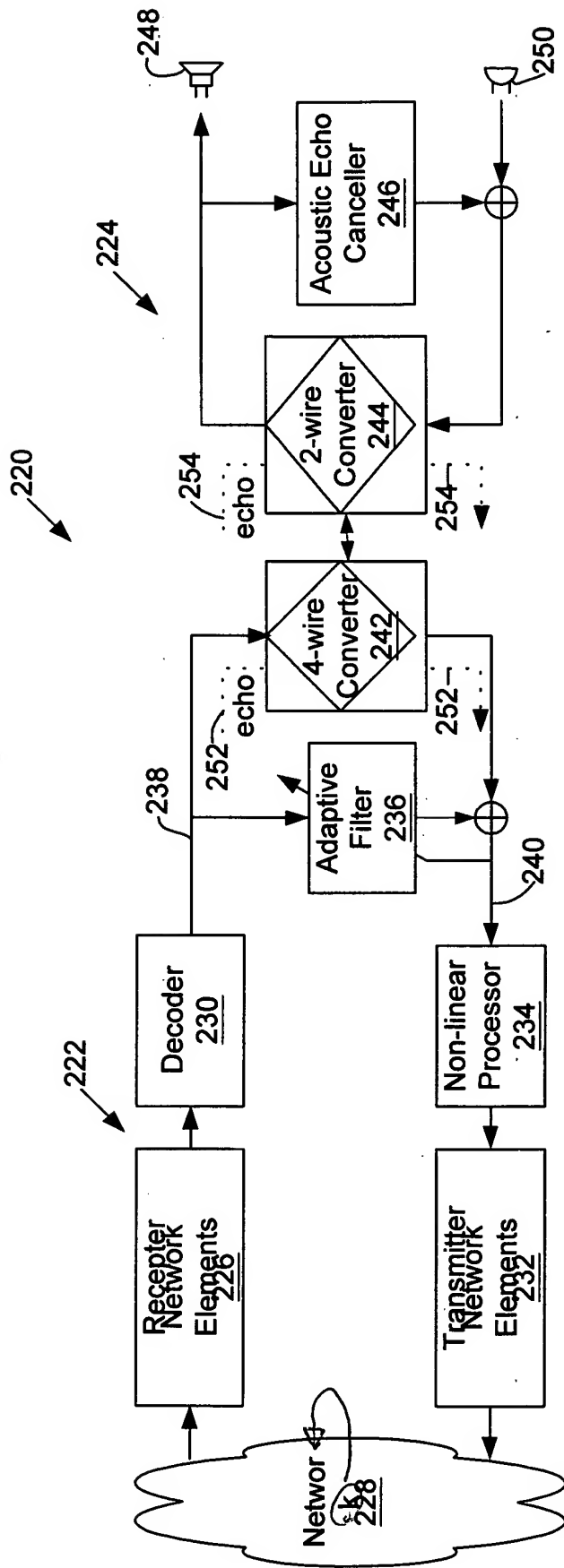


Figure 4/6

270

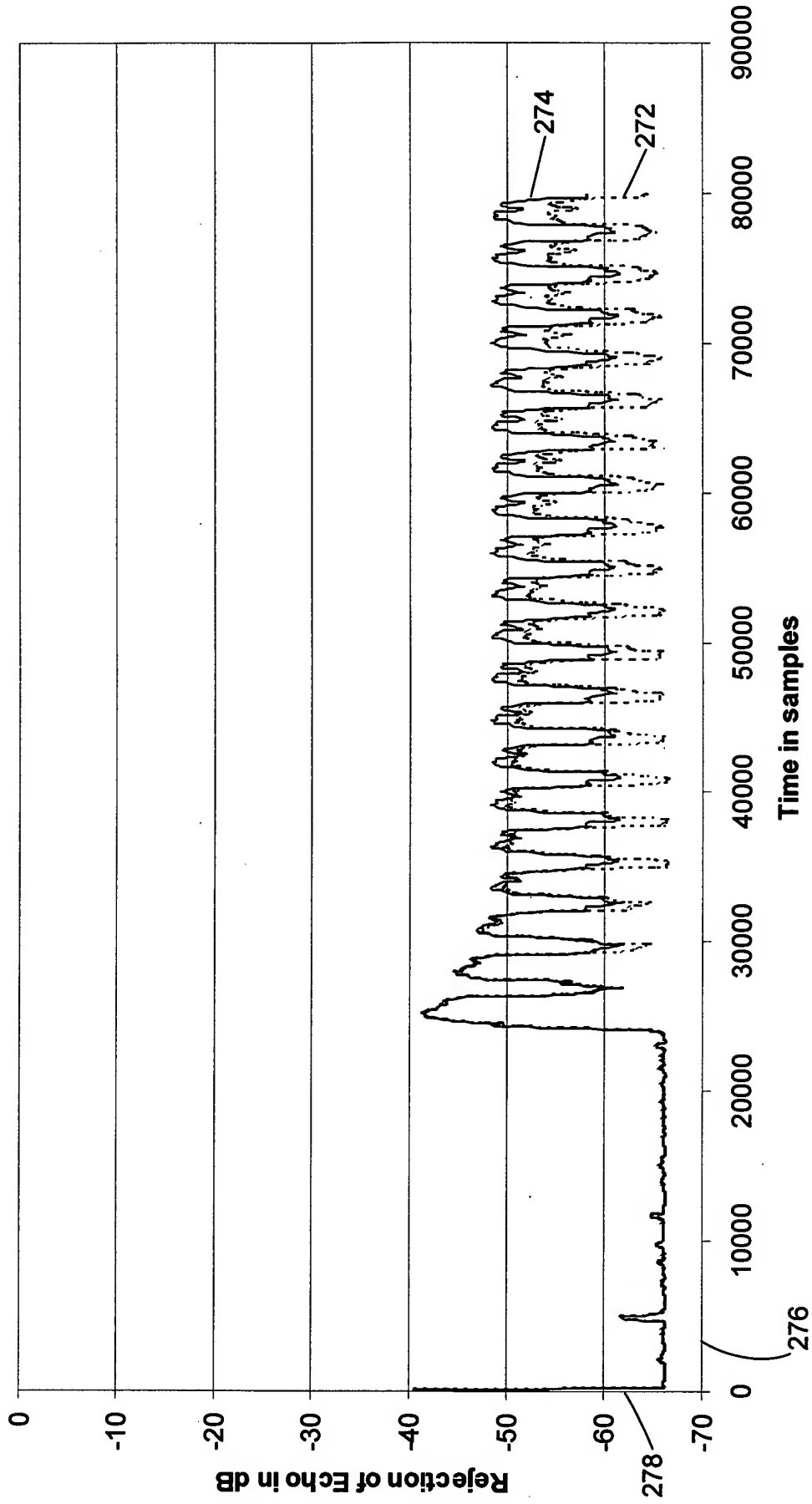


Figure 5/6

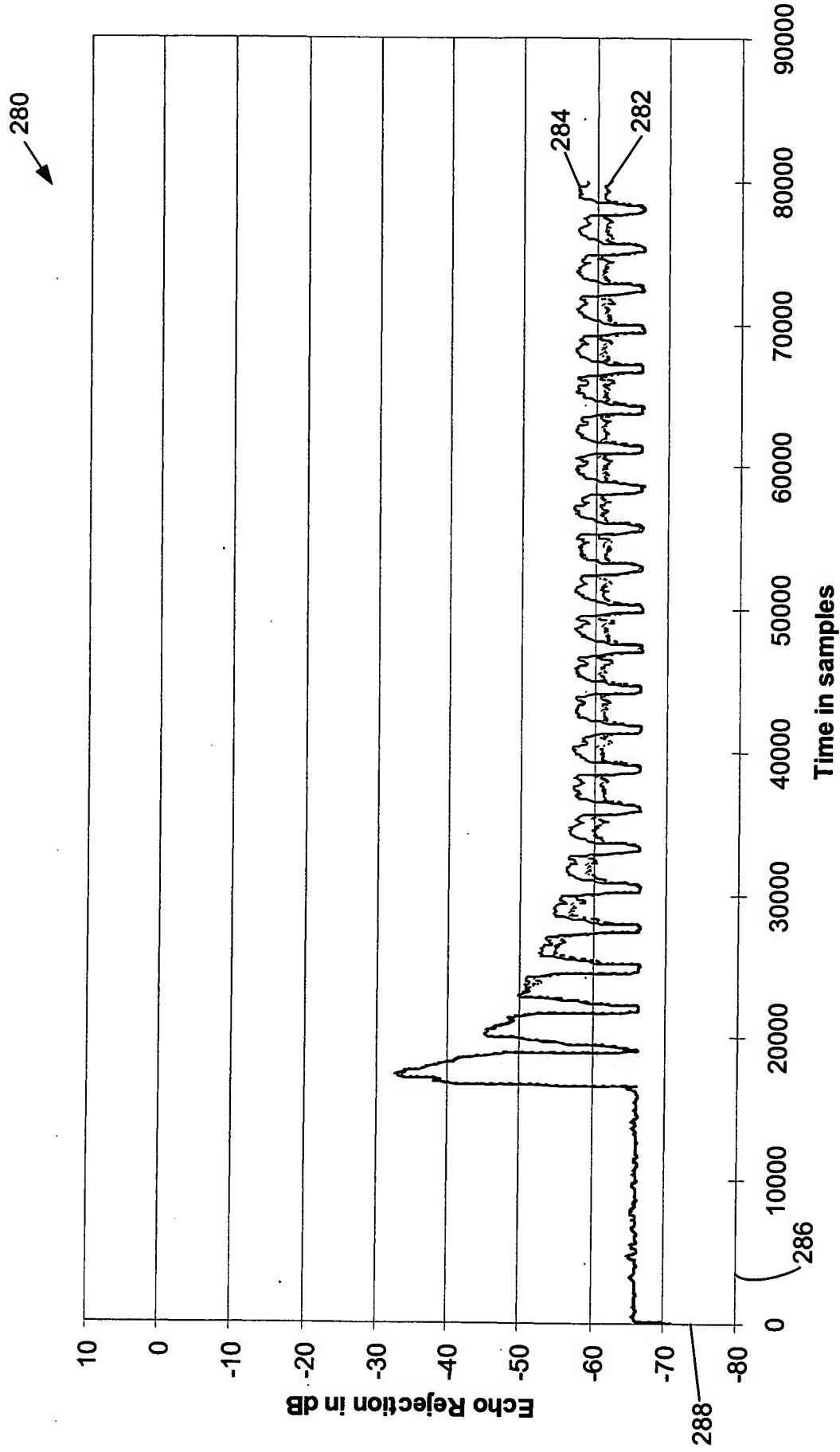


Figure 6/6